



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,457	11/20/2003	Kyung-Yol Yon	1293.1990	6652

21171 7590 03/28/2006

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

GLEITZ, RYAN M

ART UNIT PAPER NUMBER

2852

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,457

Applicant(s)

YON ET AL.

Examiner

Ryan Gleitz

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2006 and 20 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “honeycomb carrier” and “non-woven heating mat” in claims 3, 7 and 13, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2852

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurotori et al. (US 4,415,533).

Regarding claims 1, and 9-11, Kurotori et al. disclose an exhaust system of a liquid electrophotography printer including an exhaust line shown in figures 1 and 2 to discharge air inside an engine cell to an outside. Pump (7) reads on one exhaust fan, which is installed inside the exhaust line to generate and move the air inside the engine cell. Oxidation catalysts bed (4; col. 4, line 39) is an oxidative catalyst filter to filter and deodorize the impurities.

Heater (3 or 3') reads on a heating coil heating the air to be discharged through the exhaust line and igniting impurities contained in the air. The temperature range of 150 to 350 C, col. 4, line 11 completely overlaps that used by Applicant, and must be capable of igniting impurities in the air. This limitation relates to the function or use of the apparatus.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Kurotori et al. teach all the structural limitations of claim 1.

Art Unit: 2852

Regarding claim 3, covers (20, 21) form part of the exhaust line, and the oxidative catalyst filter (4) is installed inside the exhaust line and is normally of honey-comb construction and made of metals (col. 4, lines 39-50), which reads on metallic honeycomb carrier coated with a catalyst mixture.

Regarding claim 4, figures 1 and 2 illustrate the arrangement of the heating coil (3 or 3') and the oxidative catalyst filter (4) installed adjacent to each other in an orientation that must be installed sequentially.

Regarding claims 5, 7, and 8, the exhaust system above also reads on a method for removing exhaust gas in an exhaust system of a liquid electrophotography printer. In the case of method claims, full weight must be given to the functional or use limitations. However, since Kurotori et al. teach a structure including an oxidative catalyst filter operated at the same temperatures used by Applicant, Kurotori et al. inherently includes igniting impurities in the air. Extrinsic evidence of the inherency is provided by applicant's disclosure regarding the heating temperature at [0020].

Regarding claim 15 and 16, the exhaust system above is a direct combustion-catalytic oxidation unit.

Claims 1, 2, 4, and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (US 6,041,201).

Regarding claims 1, 9-12, Kim discloses an exhaust system of a liquid electrophotography printer, as shown in figure 2. Exhaust lines (L1 and L2) form the first part of an exhaust line to discharge air inside an engine cell to an outside. An exhaust fan (400) is

Art Unit: 2852

installed inside the exhaust line to generate and move the air inside the engine cell. Filter (200) is an oxidative catalyst filter to filter and deodorize the impurities. Col. 2, lines 42-45.

Heater (300) reads on a heating coil heating the air to be discharged through the exhaust line to thermally decompose using the same type of catalyst as used by Applicant at the same temperature range used by applicant, col. 3, lines 1-6, which reads on igniting, impurities contained in the air. This limitation relates to the function or use of the apparatus.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Kim et al. teach all the structural limitations of claim 1.

Regarding claim 2, the heating coil (300) is installed inside the exhaust line and covered by filter (200) which is formed of platinum, which reads on the heating coil is coated with platinum on an outer surface.

Regarding claim 4, a hollow cylinder is formed in the platinum catalyst filter and the heater is installed in the hollow cylinder, col. 2, lines 16-18, which reads on the heating coil and the oxidative catalyst filter are sequentially installed adjacent to each other, as additionally shown by figure 2.

Regarding claim 15 and 16, the exhaust system above is a direct combustion-catalytic oxidation unit.

Claims 1, 2, 4-6, 8-12, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoda et al. (US 5,198,195).

Yoda et al. disclose an exhaust system of a liquid electrophotography printer, for example in figure 21, including an exhaust fan (812) connected an exhaust line to move air inside an engine cell (800), a heating coil, for example, as shown in figure 21 with no reference numeral or referred to as an igniting heater, col. 10, line 66, as shown by 310 in figure 13, that heats the air and ignites impurities found in the air, and an oxidative catalyst filter, for example 802 in figure 21 or 308 in figure 13, to filter col. 12, lines 38-43, and deodorize, col. 12, lines 14-16.

Regarding claim 2, the heating coil is coated with platinum (col. 10, lines 66-67).

Regarding claim 4, figures 21 and 13 show that the oxidative catalyst filter and the heating coil are sequentially installed next to each other.

Regarding claims 5, 6, 8, the methods claims are also anticipated because Yoda et al. explicitly teach ignition.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 7, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US 6,041,201) in view of Yamamoto et al. (US 6,535,703).

Kim disclose the method and apparatus above but do not disclose that the filter is a metallic honeycomb carrier or a non-woven heating mat.

However, Yamamoto et al. disclose an exhaust system for a liquid printer including a filter having a honeycomb structure (col. 8, line 43) to maximize the efficiency of the filter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the filter of Kim with the honeycomb structure taught by Yamamoto et al. because in an exhaust cleaning device of honeycomb structure in which the form of the columnar flow passages is orthohexagonal pole, utilization efficiency of the inside space of the case and contacting efficiency between the adsorbent and the exhaust are particularly high. Col. 12, lines 57-62.

Claims 3, 7, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoda et al. (US 5,198,195) in view of Yamamoto et al. (US 6,535,703).

Yoda et al. disclose the method and apparatus above but do not disclose that the filter is a metallic honeycomb carrier or a non-woven heating mat.

However, Yamamoto et al. disclose an exhaust system for a liquid printer including a filter having a honeycomb structure (col. 8, line 43) to maximize the efficiency of the filter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the filter of Yoda et al. with the honeycomb structure taught by Yamamoto et al. because in an exhaust cleaning device of honeycomb structure in which the form of the columnar flow passages is orthohexagonal pole, utilization efficiency of the inside space of the case and contacting efficiency between the adsorbent and the exhaust are particularly high. Col. 12, lines 57-62.

Response to Arguments

Applicant's arguments filed 20 December 2005 ("Response") have been fully considered but they are not persuasive.

With respect to the objection to the Title, the objection is withdrawn.

With respect to the drawings objection made above under 37 CFR 1.83(a), the Office Action of 28 September 2005 addressed similar arguments. 37 CFR 1.83(a) requires "The drawings in a nonprovisional application must show every feature of the invention specified in the claims." Effectively, Applicant submits that the drawings should be accepted without illustrating the "honeycomb carrier" and "non-woven heating mat" because a filter is illustrated and the claims are construed in light of the specification, which describes the filter as taking the form of a "honeycomb carrier" and "non-woven heating mat". The principle of construing claims

in light of the specification does not relate to the drawings requirement. The two principles are separate and Applicant has provided no basis to relate them.

With Respect to Kurotori and claim 1, Applicant submits that Kurotori is not capable of igniting impurities because it lacks the oxidative catalyst filter that lowers the activation energy. Response, p. 9. However, Kurotori does include such a catalyst. Kurotori, col. 4, lines 38-50. With respect to Kurotori and claim 5, the inherency issue, response, p. 10-11, is addressed above in light of the amendment to the claims.

With respect to Kim and claim 1, Applicant presented no arguments relevant to the apparatus claims. With respect to Kim and claim 5, Applicant's arguments are persuasive and this portion of the rejection is withdrawn.

Conclusion

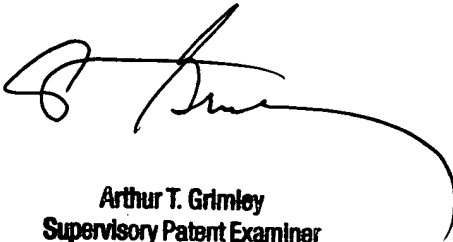
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2852

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rg



Arthur T. Grimley
Supervisory Patent Examiner
Technology Center 2800